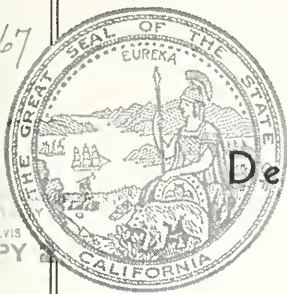


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BULLETIN No. 149-67

PROJECT LEVEE
MAINTENANCE AND REPAIR

1967 INSPECTION REPORT



APRIL 1968

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STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor of California
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ABSTRACT

Bulletin No. 149-67 PROJECT LEVEE MAINTENANCE AND REPAIR
1967 INSPECTION REPORT MARCH 1968

The report entitled "Bulletin 149-67, Project Levee Maintenance and Repair" contains ratings of the quality of maintenance performed during 1967 on levees within the flood control projects totaling 1,488 miles in length. / Project levees inspected include the Sacramento, American, San Joaquin, Calaveras, Littlejohns and Truckee Rivers, Merced County Stream Group, Middle Creek, Big Dry Creek Reservoir and Diversion and the Lower San Joaquin Flood Control Project. / The report also contains information in regard to standard maintenance procedures, levee reconstruction completed by the U. S. Corps of Engineers, and foldout plates showing locations of project levees and the various maintaining agencies.

CHAPTER I. INTRODUCTION

This is the annual inspection report for 1967, covering the flood control project works that were constructed, maintained and operated under cooperative state and federal agreements in the Sacramento and San Joaquin Valleys.

Inspection and detailed reports on the conditions of all project levees have been made each year since 1947. Copies of those reports were transmitted to the trustees, or other responsible officials, in each of the respective areas inspected and to The Reclamation Board and U. S. Corps of Engineers.

This bulletin includes the results of the inspection made during the fall of 1967 and reports on the degree of progress made by each agency on the maintenance or repair of levees subsequent to the spring inspection. The ratings given each district reflect the latest conclusions of the Department of Water Resources as to the degree of compliance with federal regulations. The report also includes project maintenance deficiencies, channel clearing accomplished during 1967, standard maintenance procedures and major levee reconstruction work by the U. S. Corps of Engineers during 1967.

Authorization

The report and plans for the Sacramento River Flood Control Project were approved by the State Legislature by Chapter 176, Statutes of 1925. Federal and state project reports, State Supreme Court opinions and State legislation declare that the

reciprocal federal and state legislation constitutes a contract between the two governments, whereby the State has given assurances, that all works after completion will be maintained and operated in accordance with regulations prescribed by the Secretary of War. State legislation enacted in 1927, 1935 and 1939 provided that specified portions or units of the project works should be operated and maintained by the State under the direction and control of the Department of Public Works, acting by and through the State Engineer prior to July 1956, and under the supervision of the Department of Water Resources subsequent to that date, with the cost thereof to be defrayed by the State. By the same acts, Section 8370 of the State Water Code the maintenance and operation of other project works included in local reclamation, drainage or levee districts or municipalities were made the direct obligation of those agencies. The act of 1939 also included section 8360 in the State Water Code which states:

"On behalf of the State, the Department has supervisory powers over the maintenance and operation of the flood control works of the Sacramento River Flood Control Project."

Although by State law since 1927, it has been the obligation of such local agencies to adequately maintain the units of the project within their respective territories, the State was without power to enforce such maintenance. In order to secure a uniform degree of operation and maintenance on federal flood control projects throughout the nation, the Corps of Engineers on August 16, 1944, made effective regulations governing the maintenance and operation of flood control works which established a

high standard of maintenance. The State, with only supervisory powers over the maintenance of project works by local agencies, lacked specific authority to enforce compliance with the regulations. This situation led to the enactment of Chapter 1528, Statutes of 1947, and repealed by Chapter 1800 Statutes of 1957, relating to operation and maintenance of the Sacramento River Flood Control Project.

Since the enactment of Chapter 1528, Statutes of 1947, the Department has made semiannual inspections of all the levees of authorized flood control projects in the Sacramento-San Joaquin Drainage Basin pursuant to the federal regulations, and reported its findings to the local agencies, The Reclamation Board and the U. S. Corps of Engineers. This activity, initiated pursuant to Section 208.10(a) of the federal regulations, has in effect provided for transfer from the local agencies to the Department the obligation to complying with Sections 8371, 8372 and 8373 of the Water Code. The supervisory powers and duties of the Department are applicable to all works of the Sacramento River Flood Control Project maintained and operated by the local agencies, without regard to status of completion, by whom constructed, or expenditure of federal funds on such works.

The Water Code, as amended by Chapter 1528, Statutes of 1947 and by Chapter 1800, Statutes of 1957, sets forth a procedure which is available when necessary, whereby adequate and uniform maintenance throughout the State may be secured for all

federal flood control projects authorized by the State for financial assistance, including Soil Conservation Service projects. In substance, formation of a maintenance area is initiated following a finding by the Department that there has been a failure on the part of a local agency to properly maintain project works in accordance with federal regulations, or that a local agency no longer desires to operate and maintain the project. Thereafter, by following the prescribed procedure (including the holding of a hearing if protests are filed by the local agency), The Reclamation Board (for projects within the Sacramento-San Joaquin Drainage Basin), or the Department of Water Resources (for projects in other areas of the State), may form a maintenance area in which the Department of Water Resources maintains that particular unit of the project works. Cost of maintenance is apportioned upon the property benefited within the maintenance area on an ad valorem basis. The assessment is extended for collection with county taxes on the county assessment roll.

At present, there are 11 maintenance areas within the Sacramento River Flood Control Project and two on the Major and Minor Tributaries Project.

Area of Inspection

This report covers the following project levees aggregating 1,488 miles in length, situated in 110 districts or areas:

1. Sacramento River and Tributaries
2. American River
3. San Joaquin River and Tributaries
4. Calaveras River, Littlejohns Creek and Tributaries

5. Merced County Stream Group
6. Big Dry Creek Reservoir and Diversion
7. Middle Creek
8. Truckee River
9. Lower San Joaquin Flood Control Project
10. Sacramento River Bank Protection Project

Each levee unit of a district or area was inspected, and required maintenance or repairs noted on a check sheet.

CHAPTER II. STATUS OF LEVEE MAINTENANCE

Inspections and detailed reports in regard to the maintenance condition of all project levees have been made in the spring and fall of each year since 1947. Following these detailed inspections, a joint field inspection is made with representatives of each local maintaining agency and representatives of the State Department of Water Resources to review and discuss the inspection report. The maintenance regulations are explained and attention called to portions of levee work in urgent need of maintenance or repair. Representatives of the local maintaining agency are also given a copy of the inspection sheet listing work that should be accomplished in order to comply with the federal regulations.

With the increasing urban development and recreational needs, the flood control system of the Sacramento and San Joaquin Valleys is being encroached upon more and more. Control of encroachments is essential to the safety and integrity of the system. Section 8710 of the Water Code of the State of California requires that all plans for encroachments must be approved by The Reclamation Board prior to their construction.

The Department of Water Resources and U. S. Army Corps of Engineers review these plans from an engineering and maintenance standpoint. The effect of the encroachment on the flood control capacity is also studied. Comments and recommendations are forwarded to The Reclamation Board for consideration

before that Board acts to approve or deny the planned encroachment. The Department of Water Resources is also responsible for the inspection of the construction of any approved encroachment. The inspections are made to determine that good construction standards are being followed and that the construction is in accordance with the approved plans.

In 1967, a total of 372 applications for encroachments on the various projects of the flood control system were reviewed by the Department. Of this number, four were denied by The Reclamation Board and 34 are pending. The pending applications either require more detailed plans or additional study. It is essential that each local maintaining agency police its levee system in order to control unauthorized encroachments.

Many of the ratings listed as "poor" or "fair" could have been improved by the simple expedient of removing undesirable growth on the levee slopes and rock revetments. This could have been accomplished by spraying the undesirable vegetation with selective herbicides in the spring or fall and burning during the late summer season. Such treatment would have made it possible to view the levee section and detect and repair any burrow holes, caves, slough, or other damages to the levee not otherwise apparent.

Other examples of inadequate maintenance were:

(a) Failure to shape crown roadways so as to provide proper drainage during wet weather and to add gravel where needed. (b) Allowing abandoned pipes not properly sealed and inoperative and leaky pipes, to remain in the levee section. (c) Allowing unauthorized grazing or vehicular traffic on the levees. (d) Not burning or mowing grass and weeds during appropriate seasons.

Description of Tables

The status of maintenance is presented herein, in tabular form for convenience of review. The quality of maintenance provided for the levees of the various projects is shown for each maintaining agency.

Table 1 lists all maintaining agencies of Project Levees of the Sacramento River and its tributaries. Table 2 lists maintaining agencies for works completed to date on the San Joaquin River and Tributaries Project, the Calaveras River and Littlejohns Creek Project, the Merced County Stream Group Project, and the Big Dry Creek Reservoir and Diversion Project in Fresno County. Table 3 lists the maintaining agencies for all works completed to date on the Middle Creek Project located in Lake County and Truckee River Project located in Placer County.

In Tables 1, 2 and 3, each district or area responsible for maintenance of the separate portions of levees within its boundaries of jurisdiction is listed along with the agency's levee unit number, the stream and bank on which the levee is located, and the length of levee in miles. The columns under Compliance with Federal Regulations Governing Maintenance list 12 major factors taken from the federal regulations and are the basis for determining the overall ratings assigned each district for performance of maintenance for 1967.

The two columns under Overall Ratings list first the progress attained during the year and secondly the maintenance performed by the maintaining agencies. The last column lists and remarks that are pertinent to assigning the ratings.

Table 4 presents a tabulation of maintenance performance for each district or area in the Sacramento River and Tributaries Project from 1947 through 1967. The ratings for districts with more than one unit are composite ratings.

Table 5 presents a tabulation of maintenance performance for each district or area in the San Joaquin River and Tributaries Project and the miscellaneous projects from 1958 through 1967. The ratings for districts with more than one unit are composite ratings.

Tables 6 and 7 list the districts and areas numerically or alphabetically according to their performance ratings for 1967. The ratings for those districts and areas which have more than one levee unit are a composite of the ratings for the individual levee units.

Maintenance Ratings

Maintenance ratings are based upon adherence to the procedures outlined in a leaflet prepared by the Department of Water Resources, entitled "Recommendations for Levee Maintenance", which is a condensation of the Federal regulations for levee maintenance. These recommendations, which are explained in Appendix A, have been made available to the various agencies responsible for the performance of maintenance.

The ratings assigned to a particular unit and shown in this report are the results of an appraisal of the 12 major factors listed along with the important items considered in assigning the rating for each major factor:

1. District Maintenance Program - Has the maintaining agency initiated a definite maintenance program with a set budget to provide for the program?

2. Readiness For Flood Emergency - Has the maintaining agency organized a definite plan to effectively combat a flood situation? Has one individual been appointed to supervise and be responsible to carry out the plan? Does the maintaining agency have a stockpile of standard flood fighting equipment such as sacks, burlap, canvas, hand tools and access to portable radios for communications during levee patrolling?

3. Adequate Levee Section and Grade - Does the maintaining agency's levee system meet the standards for the levee section and grade for their particular levee system?

The following tabulation lists the standard levee sections for the various projects:

(Tabulation on Page 12)

STANDARD LEVEE SECTIONS

<u>Project</u>	<u>Crown Width in Feet</u>	<u>Slope</u>		<u>Freeboard</u>
		<u>Landward</u>	<u>Waterward</u>	
<u>Sacramento River and Tributaries</u>				
Old Sacramento River	20 ¹ / ₂	1 on 2	1 on 3	3
Sacramento Major Tributaries	20	1 on 2	1 on 3	3
Sacramento Minor Tributaries	12	1 on 2	1 on 3	3
Bypasses (Yolo & Sutter)	20	1 on 2	1 on 3	5
<u>San Joaquin River and Tributaries</u>				
Rt. Bank San Joaquin downstream from Walthal Sl. to Burns Cut	20	1 on 2	1 on 3	3
Lt. Bank San Joaquin downstream from Banta Carbona Intake to Burns Cut	20	1 on 2	1 on 3	3
San Joaquin River & Tributaries above these points & Old River	12	1 on 2	1 on 3	3
Bear Creek	12	1 on 2	1 on 3	3
San Joaquin River & Tributaries above Merced River	12 ² / ₂	1 on 2	1 on 3	3
Bypasses (Eastside, Mari- posa & Chowchilla)	12 ² / ₂	1 on 2	1 on 3	4

1/ The crown width at a number of locations exceeds 20 feet due to public highways or right-of-way agreements.

2/ At a few locations the crown width has been increased due to poor soil conditions or right-of-way agreements.

4. Adequate Encroachment Control - Has the maintaining agency made a concentrated effort on its own to protect the levee section from the establishment of unauthorized encroachments? Has the agency made an effort to remove any of the unauthorized encroachments?

5. Control of Wild Growth - Has the maintaining agency cleared all of the wild growth, such as willows, elderberry, locust, bamboo and other undesirable growth from both slopes and rock revetment?

6. Rodent Control - Has the maintaining agency put forth an effective program for exterminating burrowing animals? Do the maintenance crews make periodic inspections of the levee slopes to exterminate any new infestation of rodents?

7. Repair of Cracks, Burrows and Rainwash - Has the local maintaining agency made all the necessary repairs to any cracks, burrows or rainwash damage on the levee slopes? A number of the local districts exterminate the burrowing rodents but fail to backfill the open burrow.

8. Repair of Erosion and Caving - Has the local maintaining agency made repairs to eroded and caved areas along their banks and levees? If early repairs are made to these damaged areas by the maintaining agency major bank protection work and levee repair can be avoided.

9. Condition of Rock Revetment - Has the maintaining agency effectively controlled and removed wild

growth from the revetment? Have repairs been made to areas where the revetment has been displaced or damaged?

10. Condition of Crown Roadway and Gates - Has the maintaining agency properly shaped the crown roadway so as to provide proper drainage during wet weather? Have ruts been filled and gravel added to provide access at all times for maintenance, patrolling and flood fighting vehicles? Are all gates maintained and repaired to effectively control access by unauthorized vehicular traffic?

11. Control of Livestock Pasturing - Has the maintaining agency properly controlled unauthorized stock pasturing of the levee slopes and insured that any stock damaged sections have been repaired?

12. Condition of Pipes - The following items concerning pipes, if applicable, are noted during the inspection:

- a. Is there any debris or any other obstruction at the ends of the pipe to prevent its proper operation?
- b. Is there any damage or settlement to the pipe?
- c. Is the metal sound? Are rust holes beginning to show on the exposed portions of the pipe?
- d. Are all gates and valves in good operating condition?

- e. Have any cracks occurred in the headwalls?
- f. Is there any erosion occurring adjacent to the structures which might endanger its water tightness or stability?

It should be pointed out that a rating pertains only to the maintenance performance and not to the stability of the levee. For example, a poor maintenance rating does not necessarily imply that the stability of the levee is impaired.

The ratings used in classifying the quality of maintenance performed by each agency area are as follows:

1. "Outstanding" indicates the maintenance work is in complete accordance with the federal regulations governing maintenance and operation of flood control works.
2. "Good" indicates the maintenance work provided is in accordance with federal regulations or varies from that standard only in minor instances.
3. "Fair" indicates that while the work is generally acceptable, considerable improvement is required for compliance with standards.
4. "Poor" indicates that no maintenance or only a token amount has been performed, and indicates that the agency is not fulfilling its obligation to provide adequate maintenance.

SUMMARY OF THE 1967 MAINTENANCE PERFORMANCE BY PROJECT

<u>Project</u>	<u>Miles of Levees</u>	1967 Maintenance Evaluation (Percent)		
		<u>Good</u>	<u>Fair</u>	<u>Poor</u>
Sacramento River Flood ^{1/} Control Project	1063.3	81	15	4
American River Project	8.3	100	-	-
San Joaquin River and ^{2/} Tributaries Project	117.6	59	27	14
Calaveras River and Littlejohns Creek and Tributaries Project	52.9	100	-	-
Littlejohns Creek Channel ^{3/}	23.6	100	-	-
Merced County Stream Group Project	6.4	100	-	-
Big Dry Creek Reservoir and Diversion Project	9.3	100	-	-
Middle Creek Project	14.3	100	-	-
Lower San Joaquin Flood Control Project	191.5	100	-	-
Truckee River Project ^{3/}	0.6	100	-	-
<hr/>				
Total Miles (Levee Only)	1463.6			
Percentage of Total Miles		83	13	4

^{1/} Includes areas where there is only bank protection.

^{2/} 22.7 miles of levee were not included in this total due to reconstruction work by the U.S.C. of E.

^{3/} Channel only, mileage or percentage not included in totals.

CHAPTER III. PROJECT MAINTENANCE DEFICIENCIES

In order to continue to improve the quality of maintenance in areas or districts in the Sacramento and San Joaquin Flood Control Projects, there must be an active public agency to perform the required maintenance work. However, areas still exist where there is no local organized district to perform the required maintenance of project works.

The following is a description of the areas in which there is no present organization:

1. Eastern Honcut Creek Area. The levee, 1.49 miles in length, is situated along the left bank of Honcut Creek, extending from the Western Pacific Railroad tracks easterly to high ground. The entire levee has been reconstructed by the Corps of Engineers.

2. The left bank of the San Joaquin River from Paradise Cut to Mossdale Bridge and the right bank of Paradise Cut from Southern Pacific Railroad crossing upstream to Paradise Dam. These levees total 4.2 miles in length and have been reconstructed by the Corps of Engineers.

Areas of Previous Levee Instability

During the 1967 inspection, areas of previous levee instability were inspected at the following locations.

Reclamation District No. 341 - Sherman Island

Levee mile 8.90 to 9.68 - Continued subsidence at this location has occurred since reconstruction of the levee in 1954. New material has been placed on the levee section from time to time, then reshaped and more material added, in an attempt to stabilize the levee section. In 1964, the U. S. Corps of Engineers enlarged and shaped the levee, placed stone protection on the waterward slope and graveled the crown roadway. Active subsidence 0.5 to 1.0 feet in depth along with longitudinal cracks have reoccurred between levee miles 9.15 to 9.21 and 9.24 to 9.26. Subsidence that occurred in 1965 between levee miles 9.03 to 9.08 and 9.21 to 9.22 showed only very minor activity during 1967.

Reclamation District No. 1601 - Twitchell Island

Left bank. Threemile Slough.

Levee mile 0.51 to 1.20 - Subsidence at this location occurred during reconstruction of the levee in 1954. Material was later added to the crown and landward slope from time to time and although the activity continues, the rate of subsidence has materially lessened. The Corps of Engineers has also placed rock on the waterward slope along most of this reach since 1954. During 1964, subsidence occurred between levee mile 0.78 and 1.01 along the landward crown and shoulder 2.0 to 5.0 feet below crown elevation. No new subsidence has been observed in this area since 1964.

Reclamation District No. 2098 - Cache Haas Slough Area

Due to the instability of the levee section between levee mile 3.62 to 4.43, Unit No. 1 and levee mile 4.43 to 5.80,

Unit No. 2, the U. S. Corps of Engineers has not transferred the above portions to the State of California for operation and maintenance. Following is the condition of the areas both within the Corps' responsibility and within the local district's responsibility:

Unit No. 1, right bank Yolo Bypass.

Levee mile 3.63 to 3.68 - Subsidence has occurred along the landward slope and levee crown 1.0 to 2.0 feet below crown elevation.

Levee mile 3.70 to 3.75 - Entire levee section has subsided 1.0 to 2.0 feet below original crown elevation.

Levee mile 3.78 to 3.82 - Entire levee section has subsided 1.0 to 2.0 feet below original crown elevation.

Levee mile 3.82 to 3.86 - Slough along waterward slope approximately 5.0 feet below original grade.

Levee mile 5.13 to 5.24 - Entire levee section has subsided 1.0 to 3.5 feet below original crown elevation.

Levee mile 5.84 to 5.85 - Circular arc slip on waterward slope 1.5 feet below original grade.

Levee mile 5.91 to 5.92 - Circular arc slip on waterward slope 1.5 feet below original grade.

Levee mile 6.89 to 6.90 - Slip along landward side of levee crown and shoulder. The local district continues to make repairs at this location by adding additional material to the waterward slope in an effort to maintain a standard levee section.

Levee mile 7.41 to 7.43 - This section of levee continues to remain unstable. The local district has made repairs from time to time. However, the crown elevation remains 3.0 feet below original grade.

Levee mile 7.92 to 7.96 - This section of levee was repaired in the summer of 1967 by the local district. In the fall of 1967, this section again slipped on the landward slope 0.5 to 1.0-foot.

CHAPTER IV. STATUS OF CHANNEL MAINTENANCE

Through Section 8361 of the Water Code, the State of California is responsible for maintaining the channels and overflow channels of the Sacramento River and its tributaries within the Sacramento and San Joaquin Drainage District. Senate Bill No. 20, amending Section 8361 of the Water Code, was passed in 1965 and gave the Department of Water Resources the responsibility of the maintenance of flood control channels outside of the Sacramento and San Joaquin Drainage District boundaries but adjacent to the reaches wherein federal and state authorized flood control works have been constructed along the Sacramento River and its tributaries.

During 1967, the Department of Water Resources made an inspection of the channels and floodways of the Sacramento and San Joaquin Rivers and their tributaries and the Middle Creek Flood Control Project. The purpose of this inspection was to determine the amount of channel or floodway acreage cleared or recleared by the Department or local interests. These areas were plotted on aerial mosaics and the acreage calculated.

The purpose of the channel and floodway inspection and maintenance is to insure that conditions which adversely affect the channel capacity are eliminated. The integrity of the flood control system must be maintained and the freeboard of the levee system not encroached upon. Maintenance is also required to control adverse velocities which might be directed against the levee system.

The following tabulation lists the acreage cleared in the various channels during 1967 by the maintaining agencies.

CHANNEL CLEARING 1967

<u>Maintaining Agency</u>	<u>Channel or Floodway</u>	<u>Reclearing In Acres</u>	<u>Brush Control In Acres</u>
State of California	Cherokee Canal	-	218.0
State of California	Deer Creek	-	212.0
State of California	Elder Creek	-	125.0
State of California	Lindo Creek	-	150.0
State of California	Mud Creek	-	329.0
State of California	Tisdale Bypass	-	164.0
State of California	Feather River	1,807.0	-
State of California	Sacramento River	693.0	238.0
State of California	Cache Creek	-	44.0
State of California	Cache Creek Settling Basin	40.0	-
State of California	Putah Creek	127.0	-
State of California	Yankee Slough	18.5	-
State of California	Bear River	321.0	-

<u>Maintaining Agency</u>	<u>Channel or Floodway</u>	<u>Reclearing In Acres</u>	<u>Brush Control In Acres</u>
Lower San Joaquin Levee District	San Joaquin River	152.0	-
Lower San Joaquin Levee District	Eastside Bypass	40.0	-
Lower San Joaquin Levee District	Mariposa Bypass	35.0	-
Lower San Joaquin Levee District	Bear Creek	50.0	-
	TOTAL	<u>3,283.5</u>	<u>1,480.0</u>

T A B L E S

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SHEET 1 OF 9 SHEETS

District or area	Unit number	Stream	Bank R/L	Length of in miles	Compliance with Federal regulations governing maintenance of flood protection works												Overall ratings		Remarks	
					District main levee program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth	Rodent control	Repair of cracks, burrows & ramways	Repair of erosion and caving	Condition of rock revetment	Roadways & gates	Control of livestock pasturing	Condition of pipes			
L.D. No. 1		Feather	X	16.7	G	G	F	G	G	G	G	G	G	G	G	G	G	G	G	
L.D. No. 2		Sacramento	X	4.9	G	F	G	G	G	G	G	G	G	-	G	G	G	G	G	G
L.D. No. 3		Sacramento	X	12.2	G	F	G	G	G	G	G	G	G	F	G	G	G	G	G	G
L.D. No. 9		Feather	X	6.2	O	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
R.D. No. 3	1	Steamboat Sl	X	11.0	F	F	G	P	F	F	F	P	P	G	G	G	G	G	F	Heavy Growth of Johnson Grass
do	2	Sacramento	X	17.6	F	F	G	P	F	F	F	P	P	G	G	G	G	G	F	
R.D. No. 10	1	Simmerly Sl.	X	7.7	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	
do	2	Feather	X	11.2	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	
do	3	Honcut Creek	X	3.0	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	
R.D. No. 70	1	Butte Bypass	X	8.0	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	
do	2	Sacramento	X	15.6	G	G	G	F	G	G	G	G	G	F	G	F	G	G	G	Rock Failure L.M. 0.19 to 0.23
R.D. No. 108		Colusa Drain	X	20.5	G	G	G	G	G	G	F	G	G	-	G	G	G	G	G	
R.D. No. 150	1	Sutter Sl.	X	0.5	F	F	G	G	F	G	F	F	G	G	G	G	G	G	F	
do	2	Sacramento	X	8.0	F	F	G	P	F	F	F	P	P	G	G	G	G	G	F	
do	3	Elk Slough	X	9.6	F	F	G	P	P	F	F	P	P	-	G	G	G	G	F	This levee recieves only backwater against it.
R.D. No. 307		Sacramento	X	6.7	P	P	G	P	P	P	P	P	P	F	G	G	G	G	P	The District has started to clean brush from rock revetment.
R.D. No. 317		Georgiana Sl.	X	2.0	P	F	G	G	F	F	F	P	P	G	G	G	G	G	P	Very little maintenance performed.
R.D. No. 341	1	Threemile Sl.	X	3.3	F	F	G	F	F	F	G	F	F	G	G	F	F	F	F	
do	2	Sacramento	X	6.4	F	F	F	F	F	F	G	F	F	F	G	G	G	G	F	
R.D. No. 349	1	Sacramento	X	1.6	P	P	G	F	P	P	P	P	P	F	G	G	G	G	P	Rock Failure L.M. 8.47 to 8.56 & 8.57 to 8.90 No maintenance performed.
O-Outstanding		G-Good	F-Fair	P-Poor																

O-Outstanding

G-Good

P-Poor

F-Fair

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEL MAINTENANCE FOR - 1967

SHEET 2 OF 9 SHEETS

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with Federal regulations governing maintenance of flood protection works												Overall ratings		Remarks	
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Control of wild growth		Rodent control	Repair of cracks, burrows & rainwash	Repair of erosion and caving	Condition of rock revetment	Roadways & gates	Control of livestock pasturing	Condition of pipes	Progress		Maintenance
									Waterside (including rock)	Landside										
do	2	Steamboat Sl.	X	4.4	P	P	G	P	P	P	P	P	F	F	P	G	G	P	Very little maintenance performed Token maintenance only	
do	3	Sutter Sl.	X	6.6	P	P	G	F	P	P	P	P	P	P	F	P	G	G	P	
R.D. No. 369		Sacramento	X	0.8	P	P	G	F	P	P	P	P	P	F	P	G	G	G	P	
R.D. No. 407	1	Georgiana Sl.	X	4.0	G	G	G	F	G	G	G	G	G	G	F	G	G	G	G	
do	2	Sacramento	X	3.4	G	G	G	F	G	G	G	G	F	G	F	G	G	G	G	
R.D. No. 501	1	Steamboat Sl.	X	6.8	G	G	G	F	G	G	G	G	G	G	G	G	G	G	G	
do	2	Cache Sl.	X	3.6	G	G	G	G	G	G	G	G	G	G	F	G	G	G	G	
do	3	Miner Sl.	X	7.8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	4	Sutter Sl.	X	2.3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 536	1	Lindsey Sl.	X	5.7	G	G	G	G	G	F	G	G	G	G	G	G	G	G	G	
do	2	Yolo Bypass	X	5.0	G	G	G	G	G	G	G	G	G	G	G	-	G	G	G	
R.D. No. 537	1	Sacramento	X	4.8	G	F	G	F	G	G	G	G	G	G	G	G	G	G	G	
do	2	Yolo Bypass	X	1.3	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 551		Sacramento	X	6.8	G	F	G	F	G	F	G	G	G	G	P	G	G	G	G	
R.D. No. 554		Sacramento	X	1.2	P	F	G	P	F	F	G	F	G	P	G	G	G	G	F	
R.D. No. 556	1	Georgiana Sl.	X	5.5	F	F	G	F	F	F	F	F	F	G	P	G	G	G	P	
do	2	Sacramento	X	5.7	P	P	G	P	F	F	F	F	F	P	P	G	G	G	P	
R.D. No. 563		Georgiana Sl.	X	12.4	F	G	G	P	F	F	F	F	P	P	P	G	G	G	F	
R.D. No. 755		Sacramento	X	1.9	F	P	G	F	F	F	F	G	G	P	P	G	G	G	F	
R.D. No. 765		Sacramento	X	1.7	P	F	G	G	F	F	F	G	G	F	P	G	G	G	F	
R.D. No. 777		Feather	X	4.1	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 784	1	Yuba	X	2.2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	

O-Outstanding

G-Good

F-Fair

P-Poor

TABLE 1

SACRAMENTO VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR -1967

SHEET 3 OF 9 SHEETS

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works										Overall ratings		Remarks			
					District maintenance program	Roadness for flood emergency	Adequate levee section & grade	Aquatic encroachment control	Waterside (including rock)	Control of landslide	Rodent control	Repair of cracks, burrows & ransoms	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gales	Control of livestock pasturing		Condition of pipes	Progress	Maintenance
do	2	Feather	X	13.6	G	G	G	G	G	G	F	G	G	G	G	G	G	G	G	
do	3	Bear	X	4.7	G	G	G	G	G	G	F	G	G	G	G	G	G	G	G	
do	4	Interceptor Canal	X	6.2	G	G	G	G	G	G	F	F	G	-	G	G	G	G	G	
do	5	Interceptor Canal	X	4.2	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	
do	6	South Dry Creek	X	1.5	G	G	G	G	G	G	F	G	G	-	G	G	G	G	G	
R.D. No. 785	1	Sacramento	X	2.4	P	P	G	G	P	F	F	F	G	G	G	G	G	P	F	
do	2	Yolo Bypass	X	3.3	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 787		Colusa Drain	X	4.4	G	G	G	G	P	G	F	G	G	G	G	G	G	G	G	
R.D. No. 817	1	South Dry Crk	X	3.8	F	F	G	G	G	F	F	F	F	-	G	G	G	F	F	District+ claims they have no rights to maintain.
do	2	Bear	X	3.9	F	F	G	G	F	F	P	F	F	G	G	G	F	F	F	
R.D. No. 827	1	Sacramento	X	1.4	P	P	G	G	P	G	P	P	P	-	-	G	G	P	P	
do	2	Yolo Bypass	X	2.8	F	P	G	G	G	G	F	G	G	G	G	G	G	F	F	
R.D. No. 900	1	Sacramento	X	8.0	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	2	Yolo Bypass	X	5.7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 999	1	Yolo Bypass	X	15.4	F	G	G	F	G	G	G	G	G	G	G	G	G	G	G	
do	2	Miner Sl.	X	2.3	F	G	G	F	F	F	G	G	F	G	G	G	G	F	F	This levee does not receive flood waters against it.
do	3	Sutter Sl.	X	3.7	F	G	G	F	F	F	G	G	F	G	G	G	G	F	F	
do	4	Sacramento	X	1.2	F	G	G	F	F	F	G	G	G	G	G	G	G	F	F	
do	5	Elk Slough	X	9.7	P	G	G	P	P	P	P	P	P	-	P	P	P	P	P	This levee receives only back water against it.
					</															

G-Outstanding

G-Good

F-Fair

P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR ~ 1967

SHEET 4 OF 9 SHEETS

District or area	Unit number	Stream	Book	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Waterside encroachment control	Waterside (including rock)	Landside	Rodent control		Repair of cracks, burrows & rainbows	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
R.D. No. 1000	1	Sacramento	X	18.6	0	0	G	F	G	G	G	F	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

O-Outstanding

G-Good

F-Fair

P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SHEET 5 OF 9 SHEETS

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate erosion control	Wetlands (including rock)	Landside Control of wild growth	Rodent control	Repair of cracks, burrows & ransoms	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance		
R.D. No. 2060	1	Lindsey Sl.	X	7.2	G	G	G	G	F	G	G	G	G	G	G	G	G	G	G	G	Entire Levee should be burned.
do	2	Ulatas Crk.	X	3.6	P	F	G	G	F	F	P	F	F	-	F	G	G	P	F	G	
do	3	Cache Sl.	X	5.4	G	G	G	G	G	G	G	G	F	F	G	G	F	G	G	G	
R.D. No. 2067		Sacramento	X	10.2	G	F	G	F	F	G	G	G	F	F	G	G	G	F	F	F	
R.D. No. 2068	1	Yolo Bypass	X	5.5	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	Token maintenance only
do	2	Back Levee	X	3.2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 2098	1	Yolo Bypass	X	4.4	G	G	P	F	G	G	G	G	G	G	G	G	G	G	G	G	
do	2	Cache Slough	X	2.9	G	G	P	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	3	Haas Slough	X	1.9	G	G	G	G	G	G	G	G	G	F	G	G	G	G	G	G	
do	4	Back Levee	X	3.0	G	G	G	G	G	G	G	G	G	F	G	G	G	G	G	G	
R.D. No. 2103	1	South Dry Crk.	X	4.8	P	F	G	F	F	F	P	P	P	-	P	F	G	G	P	P	
do	2	Bear	X	4.9	P	F	G	F	F	F	P	P	P	F	G	G	G	P	P	P	
R.D. No. 2104	1	Cache Sl.	X	2.6	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	2	Haas Sl.	X	4.8	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
American River Flood Control District	1	Arcade Cr.	X	2.1	G	G	F	G	F	G	G	G	G	-	G	G	G	G	G	G	
do	2	Natomas East Canal	X	4.0	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	G	
do	3	American	X	3.4	G	G	G	F	G	G	G	G	F	G	G	G	G	G	G	G	
do	4	American	X	11.0	G	G	G	P	G	G	G	F	G	G	G	G	G	G	G	G	
do	5	Sacramento	X	0.4	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	G	
do	6	Linda Creek	X	1.3	G	G	G	G	G	G	G	G	G	-	F	F	G	G	G	G	
do	7	Arcade Crk.	X	1.9	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	G	
Sacramento River Westside Lev. Dist.		Sacramento	X	50.2	G	G	G	F	G	G	F	F	F	G	G	F	G	G	G	G	
O-Overstanding		G-Good	F-Fair	P-Poor																	

O-Outstanding G-Good F-Fair P-Poor

TABLE 1

SACRAMENTO VALLEY STREAMS

SUMMARIES OF PROJECT LEVEL MAINTENANCE FOR -1967

SHEET 6 OF 9 SHEETS

District or area	Unit number	Stream	Bank R/L	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works												Overall ratings		Remarks				
					District maintenance program	Roadways for flood emergency	Adequate levee section & grade	Adequate encroachment control	Wetlands (including rock) control	Control of wild growth		Rodent control	Repair of cracks, burrows & washouts	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance		
										Landslide	Control of												
City of Marysville	1	Simmerly Sl.	x	3.2	0	0	G	G	G	G	0	G	G	-	G	G	G	G	G	0			
	2	Feather	x	1.3	0	0	G	G	G	G	0	G	G	-	G	G	G	G	G	0			
	3	Yuba	x	6.9	0	0	G	G	G	G	0	G	G	G	G	G	G	G	G	0			
City of Sacramento		Sacramento	x	3.6	G	G	G	F	F	G	G	G	G	G	G	G	G	G	G	G			
	1	Knights Landing Ridge Drainage Cut	x	6.4	G	G	G	G	G	F	G	G	G	F	G	F	G	F	G	G			
	2	Knights Landing Ridge Cut	x	6.1	G	G	G	G	G	F	G	G	G	G	G	G	G	G	G	G			
Eastern Honcut Creek Area		Honcut Crk.	x	1.5	P	P	G	G	P	P	G	G	G	-	P	G	G	P	P	P			
	1	Deer Creek	x	4.1	G	F	G	G	G	G	G	G	G	F	F	F	G	G	G	G			
	2	Deer Creek	x	1.5	G	F	G	G	G	G	G	G	G	G	G	F	G	F	G	G			
Tehama County Flood Control District	3	Deer Creek	x	1.3	G	F	-	-	F	-	-	G	G	-	-	-	-	-	G	G			
	4	Elder Creek	x	4.1	G	F	G	G	G	G	G	G	G	F	G	G	G	G	G	G			
	5	Elder Creek	x	4.0	G	F	G	G	G	G	G	G	G	F	G	G	G	G	G	G			
do	6	Sacramento	x	0.5	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
	7	Sacramento	x	0.8	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
	8	Sacramento	x	0.6	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
do	9	Sacramento	x	0.3	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
	10	Sacramento	x	0.7	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
	11	Sacramento	x	0.5	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
do	12	Sacramento	x	0.5	G	F	-	-	G	-	-	G	G	G	G	-	-	-	G	G			
1/ Channel and rock revetment sites																					G-Good	F-Fair	F-Poor
2/ Channel only																							

1/ Channel and rock revetment sites

2/ Channel only

O-Outstanding

G-Good

F-Fair

P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SHEET 7 OF 9 SHEETS

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works													Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee action & grade	Adequate encroachment control	Waterside (including rock) landslide	Control of wild growth	Rodent control	Repair of cracks, burrows & ratholes	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance	
Butte County	1	Mud Creek	x	7.3	0	G	G	G	G	G	G	G	G	G	G	G	G	0	G	
	2	Mud Creek	x	8.2	0	G	G	G	G	G	G	G	G	G	G	G	G	0	G	
	3	Sycamore & Sheep Hollow Creeks	x x	4.2	0	G	G	G	G	G	G	G	G	G	G	G	G	0	G	
	4	Sycamore & Dry Creeks	x x	2.9	0	G	G	G	G	G	G	G	G	G	G	G	G	0	G	
	5	Big Chico Diversion	2/	1.8	0	G	G	G	G	G	G	G	G	G	G	G	G	0	G	
Yolo County		Cache Creek	x	0.2	F	F	G	G	G	G	G	G	G	G	G	G	G	0	G	
STATE OF CALIFORNIA																				
Sacramento River East Levee	1	Sacramento	x	20.4	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
	2	Colusa Bypass	x x	2.0	G	0	G	G	G	G	G	G	G	G	G	G	-	G	G	
	3	Moulton Bypass	x x	2.3	G	0	F	G	G	G	G	G	G	G	G	G	G	G	G	
Wadsworth Canal	1	Wadsworth Canal	x	4.7	G	0	G	G	G	G	G	G	G	G	G	G	F	G	G	
	2	Wadsworth Canal	x	4.7	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
Sutter Bypass		Sutter Bypass	x	22.4	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
Feather River Hamilton Bend Cache Creek	1	Feather	x	3.4	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	2	Cache Creek	x	11.8	G	0	G	F	G	G	G	G	G	G	G	G	G	G	G	
do	2	Cache Creek	x	6.9	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	3	Settling Basin	x	1.8	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
do	4	Settling Basin	x	2.6	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
Sacramento Bypass	1	Sacramento Bypass	x	1.8	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	
	2	Sacramento Bypass	x	1.8	G	0	G	G	G	G	G	G	G	G	G	G	G	G	G	

0-Outstanding
 2/ Channel only

G-Good
 F-Fair
 P-Poor

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works													Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Waste disposal (including rock)	Control of wild growth		Rodent control	Repair of cracks, burrows & washes	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes			
			Right						Left											
West Levee Yolo Bypass do do do	1	Yolo Bypass	X		2.7	G	O	G	F	G	G	G	G	G	G	G	G	G	G	
	2	Yolo Bypass	X		1.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
	3	Yolo Bypass	X		1.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
	4	Yolo Bypass	X		3.6	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
East Levee Yolo Bypass Willow Slough Bypass do	1	Willow Slough Bypass	X		5.1	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
	2	Willow Slough Bypass	X		7.4	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
	1	Putah Creek			9.0	G	O	G	F	G	G	G	G	G	G	G	G	G	G	
	2	Putah Creek	X		7.3	G	O	G	F	G	G	G	G	G	G	G	G	G	G	
Tisdale Bypass do	1	Tisdale Bypass	X		4.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
	2	Tisdale Bypass	X		4.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
Mtc. Area No. 1 Mtc. Area No. 2 Mtc. Area No. 3 Mtc. Area No. 4		Sacramento	X		17.1	G	O	F	G	G	G	G	G	G	G	G	G	G	G	
		Sacramento	X		12.4	G	O	F	G	G	G	G	G	F	G	G	G	G	G	
		Feather	X		5.2	G	O	G	G	G	G	G	-	G	G	G	G	G	G	
		Sacramento	X		3.4	G	O	F	G	G	G	G	F	G	G	G	G	G	G	
Mtc. Area No. 5 do	1	Butte Creek			15.4	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
	2	Butte Creek	X		16.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
Mtc. Area No. 6		Sacramento	X		6.0	G	O	G	F	G	G	F	G	G	G	G	G	G	G	
Mtc. Area No. 7		Feather	X		12.1	G	O	G	G	G	G	G	G	G	G	G	G	G	G	
Mtc. Area No. 8		Yuba	X		3.8	G	O	G	G	G	G	G	-	G	G	G	G	G	G	

	0-Outstanding	G-Good	F-Fair	P-Poor
1. The company's financial position is				
2. The company's management is				
3. The company's products are				
4. The company's services are				
5. The company's reputation is				
6. The company's future prospects are				
7. The company's overall performance is				

TABLE 1

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SHEET 9 OF 9 SHEETS

District or oreo	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works															Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Landside wild growth	Rodent control	Repair of cracks, burrows & rainwash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance			
Mtc. Area No. 9		Sacramento	X	19.6	G	O	G	F	F	G	G	G	G	G	G	G	G	G	G	Clear Rock Revetment		
Mtc. Area No. 10		American	X	4.3	G	O	G	G	F	G	G	G	G	G	G	G	G	G	G	Clear Rock Revetment		
Mtc. Area No. 11		American	X	4.0	G	O	G	F	G	G	G	G	G	G	G	G	G	G	G			
Mtc. Area No. 12		Colusa Drain	X	11.3	G	O	G	G	G	G	G	G	G	-	G	F	G	G	G			
Mtc. Area No. 13	1	Cherokee Canal	X	18.9	G	O	G	G	G	G	G	G	G	G	F	G	G	G	G			
do	2	Cherokee Canal	X	23.1	G	O	G	G	G	G	G	G	G	G	F	G	G	G	G			

O- Outstanding G-Good F-Fair F-Poor

TABLE 2
SAN JOAQUIN VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SHEET 1 OF 11 SHEETS

District or area	Unit number	Stream	Bank R/L	Length of levee in miles	Compliance with Federal regulations governing maintenance of flood protection works												Overall rating	Remarks
					District maintenance program	Neediness for flood emergency	Adequate section & grade	Adequate structure control	Waterside (including rock) control	Longside control	Repair of c. d. s.	Repair of erosion and caving	Condition of rock revetment	Condition of roadways & gates	Control of livestock pasturing	Condition of pipes		
R.D. No. 1		Old River	x	1.2	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 17	1	French Camp Slough	x	1.8	G	G	G	G	G	G	G	G	-	G	G	G	G	
do	2	San Joaquin	x	14.4	F	G	G	G	G	P	P	G	G	G	F	G	G	
R.D. No. 404	1	San Joaquin	x	2.3	F	G	G	G	F	F	F	G	G	G	G	F	F	
do	2	French Camp Slough	x	1.8	F	G	G	G	F	F	F	G	-	F	G	G	F	
R.D. No. 524		San Joaquin	x	6.3	F	F	G	F	F	F	F	F	G	G	G	F	F	
R.D. No. 544	1	San Joaquin	x	6.1	F	G	F	F	F	F	G	G	G	G	G	G	F	
do	2	Old River	x	4.2	F	G	F	F	F	F	G	G	G	G	G	G	F	
R.D. No. 2031	1	Stanislaus	x	7.2	F	G	G	G	G	G	G	G	G	G	G	G	G	
do	2	San Joaquin	x	6.0	F	G	G	G	G	G	G	G	G	G	G	G	F	
R.D. No. 2056		Paradise Cut	x	6.7	G	G	G	P	G	G	F	G	P	-	G	G	G	
R.D. No. 2062	1	San Joaquin	x	2.6	G	G	G	G	G	G	G	G	P	G	G	G	G	
do	2	Paradise Cut	x	4.0	G	G	G	P	G	F	G	G	P	-	G	G	G	
do	3	Old River	x	5.6	G	G	G	G	P	G	G	G	F	G	G	G	G	
R.D. No. 2063		San Joaquin	x	10.6	G	G	G	P	G	G	G	G	G	G	G	G	G	
R.D. No. 2064	1	San Joaquin	x	5.4	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	
R.D. No. 2075	2	Stanislaus	x	4.3	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	
R.D. No. 2085		San Joaquin	x	7.6	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	LEVEE UNDER CONSTRUCTION BY U. S. C. OF H.	
R.D. No. 2089	1	Old River	x	1.5	F	G	G	F	G	G	G	G	P	G	G	G	G	F
do	2	Salmon Sl.	x	1.4	F	G	G	F	G	G	G	G	P	G	G	G	G	F
R.D. No. 2091		San Joaquin	x	7.6	P	F	G	G	G	G	P	F	P	G	F	G	G	P
O-Outstanding																		No maintenance performed
					P-Fair	G-Good	P-Poor											

TABLE 2

SAN JOAQUIN VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR -1967

SHEET 2 OF 4 SHEETS

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate anchorage control	Wetlands (including rock)	Longside	Rodent control	Report c. cuts, burrows & r. mounds	Repair of erosion and caving	Condition of rock relevelment	Roadways & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance		
R.D. No. 2092		San Joaquin	x	3.8	F	F	G	G	F	G	G	G	G	G	F	G	G	G	F	F	
R.D. No. 2094	1	San Joaquin	x	2.8	G	G	G	G	F	G	G	F	G	G	G	G	G	G	G	G	
do	2	San Joaquin		0.5	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 2095	1	Paradise Cut	x	1.5	P	P	G	F	G	G	G	G	G	F	G	G	F	G	F	F	
do	2	San Joaquin	x	2.9	P	P	G	F	F	G	G	G	G	G	G	G	G	G	G	F	
R.D. No. 2096		San Joaquin	x	0.2	G	G	G	F	G	G	F	G	G	G	G	G	G	G	G	G	
R.D. No. 2099		San Joaquin	x	2.4	P	F	F	G	F	F	G	F	G	G	G	G	G	G	G	F	
R.D. No. 2100		San Joaquin	x	2.7	G	G	G	G	G	G	G	G	G	F	G	G	G	G	G	G	
R.D. No. 2101	1	San Joaquin	x	3.2	G	G	G	F	G	G	G	G	G	G	G	G	G	G	G	G	
do	2	San Joaquin		0.3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 2102		San Joaquin		1.8	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	F	
San Joaquin County (Unorganized)	1	San Joaquin	x	2.4	P	P	G	F	P	G	G	G	G	G	G	G	G	G	G	F	
do	2	Paradise Cut	x	1.8	P	P	G	G	F	G	G	-	F	G	G	G	F	G	F	F	
San Joaquin County Flood Control Dist.	1	Little Johns Cr.	x	2.9	G	G	G	G	G	G	G	-	G	G	G	G	G	G	G	G	
do	2	Little Johns Cr.	x	3.5	G	G	G	G	G	G	F	G	-	G	G	G	G	G	G	G	
do	3	South Little Johns Creek	2	16.5	G	G	-	F	G	-	G	-	-	G	G	G	G	G	G	G	
do	4	North Little Johns Creek	2	6.1	G	G	-	G	G	-	G	-	-	G	G	G	G	G	G	G	
do	5	Duck Creek Diversion	2	1.0	G	G	-	G	G	-	G	-	-	G	G	G	G	G	G	G	
do	6	Dikes A, B & C	1	-	G	G	G	G	G	F	F	G	G	G	G	G	G	G	G	G	
o	7	Bear Creek	x	16.8	G	G	G	F	G	F	F	G	G	G	G	G	G	G	G	G	
1/ Spur Levee																					
2/ Channel Only																					
					O-Outstanding	F-Fair	G-Good	F-Poor													

TABLE 2

SAN JOAQUIN VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR -1967

SHEET 3 OF 4 SHEETS

District or area	Unit number	Stream	Bank R/L	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works													Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate erosion control	Waterside (including rock) Logside	Control of wild growth	Rodent control	Repair of cracks, burrows & ratholes	Repair of erosion and caving	Condition of rock revetment	Condition of crown roads & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance	
do	8	Bear Creek	x	16.5	G	G	G	G	G	G	G	G	G	G	G	G	G	G	Levee washed out at Lev. Mile 0.31 12/64	
do	9	Paddy Creek	x	1.5	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	10	Paddy Creek	x	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	11	N. Paddy Crk	x	3.6	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	12	N. Paddy Crk	x	3.9	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	13	Mid. Paddy Crk	x	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	14	Mid. Paddy Crk	x	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
Lower San Joaquin Levee District	1	San Joaquin	x	22.6	G	G	F	G	G	G	G	G	G	G	G	G	G	G		
do	2	San Joaquin	x	13.8	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	3	San Joaquin	x	2.2	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	4	San Joaquin	x	1.6	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	5	Eastside By-pass	x	34.8	G	P	G	G	G	G	G	F	G	G	F	G	G	G		
do	6	Eastside By-pass	x	36.4	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	7	Bear Creek	x	3.6	G	G	G	G	G	G	G	G	F	G	F	G	G	G		
do	8	Bear Creek	x	3.6	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	9	Owens Creek	x	0.9	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	10	Owens Creek	x	0.8	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	11	Mariposa By-pass	x	3.3	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	12	Mariposa By-pass	x	3.4	G	G	G	G	G	G	G	G	G	G	F	G	G	G		
do	13	Ash Slough	x	1.3	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	14	Ash Slough	x	1.3	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
O-Outstanding		G-Good		F-Poor																

TABLE 2

SAN JOAQUIN VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

SHEET 4 OF 4 SHEETS

District or area	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works															Overall ratings		Remarks	
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate anchorage control	Weirside (including rock) control	Control of wild growth		Rodent control	Repair of c. oaks, burrows & wash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roads & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance			
										Logside	Lock												
Lower San Joaquin District	15	Berenda Sl.	X	2.0	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	16	Berenda Sl.	X	2.0	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	17	Chowchilla Canal Bypass	X	16.1	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	18	Chowchilla Canal Bypass	X	15.3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	22	Eastside Canal	X	5.5	F	G	G	G	G	G	G	G	G	G	G	F	G	G	G	G	G		
do	23	San Joaquin	X	10.2	This unit has not been accepted for maintenance by the local districts.																	No maintenance performed.	
do	24	San Joaquin	X	8.3	This unit has not been accepted for maintenance by the local districts.																	No maintenance performed.	
do	25	Salt Slough	X	2.5	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
Merced County Stream Group	1	Black Rascal Diversion	X	1.6	G	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G	G		
	2	Black Rascal Diversion	X	1.9	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	3	Owens Creek	X	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	4	Owens Creek	X	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
	do	1	Big Dry Cr. Reservoir	X	7.4	F	G	G	P	G	G	G	G	G	G	G	P	G	G	G	G	G	
do	2	Big Dry Cr. Outlet	X	0.6	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
do	3	Little Dry Crk. Outlet	X	1.3	F	G	G	P	G	G	G	G	G	G	G	G	G	G	G	G	G		
O-Outstanding				G-Good	F-Fair	P-Poor																	

MISCELLANEOUS STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

1 SHEET OF 1 SHEETS

District or oreo	Unit number	Stream	Bank	Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
					District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Wetlands (including rock)	Landside Control of wild growth	Rodent control	Repair of cracks, burrows & wash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes	Progress	Maintenance		
Lake County Flood Control District	1	Middle Creek	x	7.3	G	G	G	F	G	G	G	G	G	G	P	G					
do.	2	Middle Creek	x	3.1	G	G	G	F	G	G	G	G	G	G	F	G					
do	3	Scotts Creek	x	1.4	G	G	G	G	G	G	F	G	G	G	G	G					
do	4	Clover Creek & Bypass	x	1.5	G	G	G	F	G	G	G	G	G	G	G	G					
do	5	Clover Creek & Bypass	x	1.0	G	G	G	F	G	G	G	G	G	G	G	G					
Placer County		Truckee	✓	0.6	G	-	-	F	G	-	-	-	-	-	G	G					
1/ Channel Only																					

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS
SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
L.D. No. 1, Sutter Co.	16.7	F	F	G	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
L.D. No. 2, Glenn Co.	4.9	P	P	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
L.D. No. 3, Glenn Co.	12.2	P	F	F	P	P	F	G	F	P	P	F	P	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
L.D. No. 9, Sutter Co.	6.2	P	F	F	F	G	F	G	F	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
R.D. No. 3, Grand island	28.6	P	P	P	P	P	F	F	F	P	P	P	P	F	F	G	G	G	F	F	F	F	F	F	F	F	F	F	F
R.D. No. 10, Simmerly	21.9	F	F	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
R.D. No. 70, Meridian	23.6	F	F	G	F	F	F	G	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
R.D. No. 108, River Farms	20.5						G	G	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
R.D. No. 150, Merritt Island	18.1	P	F	F	F	P	P	P	P	F	P	P	P	P	P	F	F	F	F	F	F	F	F	F	F	F	F	F	F
R.D. No. 307, Lisbon	6.7	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	P	P	P	P	P	P	P	P	P	P	P	P	P
R.D. No. 317, Lower Andrus	2.0	P	P	P	P	G	G	G	G	P	P	P	P	P	P	P	F	F	F	F	F	F	F	F	F	F	F	F	F
R.D. No. 341, Sherman	9.7	P	P	P	P	P	P	P	P	P	P	P	P	P	P	G	G	G	G	F	F	G	F	G	F	G	F	G	F
R.D. No. 349, Sutter	12.6	P	P	F	P	P	P	P	P	P	P	P	P	P	P	F	F	P	P	F	P	F	P	F	P	F	P	F	P
R.D. No. 369, Libbey-McNeil	0.8	P	P	F	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
R.D. No. 407, Mid Andrus	7.4	P	P	P	P	P	P	F	P	P	P	P	P	P	P	F	G	G	G	G	G	G	G	G	G	G	G	G	G
R.D. No. 501, Eyer Island	20.5	F	F	F	F	F	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		O-Outstanding G-Good F-Fair P-Poor																											

O-Outstanding C-Good F-Fair P-Poor

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS
SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 536, Egbert	10.7	P	P	F	F	P	P	P	P	P	G	G	G	F	G	G	G	F	F	G	G								
R.D. No. 537, Lovdal	6.1	P	P	F	F	F	F	G	F	G	G	G	G	G	F	G	G	F	G	F	G	G							
R.D. No. 551, Pearson	6.8	P	P	F	F	F	P	P	P	P	P	P	P	P	F	F	F	P	F	F	F	G							
R.D. No. 554, Walnut Grove	1.2	P	P	P	P	P	P	P	P	P	P	G	F	G	F	P	P	P	P	P	P	P							
R.D. No. 556, Upper Andrus	11.2	P	P	P	G	F	P	P	F	P	F	P	P	P	F	F	F	F	F	F	F	F							
R.D. No. 563, Tyler Island	12.4	P	P	P	G	G	P	P	F	P	G	F	F	F	F	F	F	G	F	F	F	F							
R.D. No. 755, Randall	1.9	P	F	F	P	P	P	P	P	P	P	P	P	P	P	F	F	P	P	F	F	F							
R.D. No. 765, Glide	1.7	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	P	P	P	G	G	F							
R.D. No. 777, Live Oak	4.1	F	F	F	F	P	F	P	P	G	G	F	G	G	G	G	G	G	G	G	G	G							
R.D. No. 784, Plumas Lake	32.4	F	F	G	G	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 785, Driver	5.7	P	P	F	F	P	P	F	F	F	F	G	F	F	F	F	F	G	F	F	F	F							
R.D. No. 787, Fair	4.4						G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 817, Carlin	7.7	P	P	P	P	P	P	P	F	F	P	P	G	F	P	G	F	G	G	G	G	F							
R.D. No. 827, Elkhorn	4.2	P	P	F	P	P	P	P	P	P	P	P	P	P	P	P	F	F	P	P	P	P							
R.D. No. 900, West Sacramento	13.7	F	P	P	P	P	P	P	P	P	P	G	F	F	F	F	F	F	F	G	G	G							
R.D. No. 999, Netherlands	32.3	F	F	F	F	P	P	F	F	F	F	G	F	F	F	F	F	F	F	F	F	F							
O-Outstanding	G-Good																												
F-Fair	P-Poor																												
1/ Not Inspected	Reconstruction																												

O-Outstanding G-Good F-Fair P-Poor 1/ Not Inspected Reconstruction

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS
SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 1000, Natomas	42.6	F	P	P	F	P	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 1001, Nicolaus	44.1	P	F	F	F	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 1500, Sutter Basin	54.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	0	0	0	0	0	0	
R.D. No. 1600, Mull	14.8	P	F	F	F	F	F	F	G	G	G	G	F	F	F	F	F	F	F	F	F	G							
R.D. No. 1601, Twitchell	2.5	P	P	P	P	P	P	P	G	G	G	G	G	G	G	G	F	G	G	G	F	F	F						
R.D. No. 1660, Tisdale	12.2	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 2035, Conaway	12.1	P	P	F	P	P	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	0	0	0	0	0	0	0	
R.D. No. 2060, Hastings	16.2	F	F	F	F	F	F	F	F	G	G	G	G	G	G	G	F	G	G	G	F	G	G	F					
R.D. No. 2067, Brannan	10.2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	F	F				
R.D. No. 2068, Yolano	8.7	P	P	F	F	P	P	P	P	P	F	G	G	G	G	G	G	G	G	G	G	G	G						
R.D. No. 2098, Cache-Haas Area	12.2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	G	G	G	G						
R.D. No. 2103, Wheatland	9.7	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	1	P	P					
R.D. No. 2104, Peters Pocket	7.4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	1	P	F	F	F	G						
American River Flood Control District	24.1	F	F	F	F	G	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
Sacramento R. W. S. Levee District	50.2	P	F	G	F	F	F	F	F	F	G	G	G	G	F	F	F	F	F	F	F	F	G	F	G				
City of Marysville	11.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	0	0	0	0	0	0	0	
1/ Reconstruction - Not Inspected		0-Outstanding														G-Good				F-Fair				P-Poor					

1/ Reconstruction - Not Inspected O-Outstanding G-Good F-Fair P-Poor

SUMMARY OF MAINTENANCE BY YEARS
SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
City of Sacramento	3.6	P	P	P	P	P	P	P	P	F	G	G	G	G	G	G	F	G	G	G	G	G							
Knights Landing Ridge D. D.	12.5	P	P	P	P	F	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
Eastern Honcut Creek Area	1.5							P	F	F	F	F	P	P	P	P	P	P	P	P	P	P							
Deer Creek, Tehama County	6.9							P	P	F	F	F	F	P	P	P	F	G	F	F	F	G							
Elder Creek, Tehama County	8.1																G	G	F	G	F	G							
Sacramento River, Tehama County	3.9																		F	G	G	G							
Cache Creek, Yolo County	0.2																G	G	P	F	G	G	G						
Chico, Mud & Sandy Creeks (Butte County)	24.4																				G	G	G						
STATE OF CALIFORNIA																													
Sacto. R. E. Levee Colusa Co.	24.7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
E & W Levee Wadsworth Canal	9.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
E. Levee Sutter Bypass	22.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
W. Levee Feather Riv. Hamilton	3.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
Cache Creek & Settling Basin	23.1	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
N & S Levee Sacramento Bypass	3.6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
W. Levee Yolo Bypass	9.3	F	F	F	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
		O-Outstanding G-Good F-Fair P-Poor																											

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS
SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
E. Levee Yolo Bypass	2.0	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
N & S Levee Willow Sl. Bypass	12.5		P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
N & S Levee Putah	16.3			P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
N & S Levee Tisdale Bypass	9.0	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
<u>MAINTENANCE AREAS</u>																													
No. 1 (R.D. 2047)	17.1	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 2 (L.D. No. 1, Glenn Co.)	12.4	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 3 (R.D. 803 and 823)	5.2	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 4 (R.D. 811 & Wash. L.D.)	3.4	P	P	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 5 (Butte Creek)	31.9						P	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 6 (R.D. 730 & K.L. Area)	6.0	P	P	P	F	F	F	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 7 (D.D. No. 1 & Unorg.)	12.1											G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 8 (S.Levee Yuba River)	3.8											F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 9 (E. Levee Sacramento) (River South of Sacramento)	19.6											F	G	G	F	G	F	F	F	F	F	F	F	F	F	F	F	F	
No. 10 (N. Levee American River)	4.3														G	G	G	G	G	G	G	G	G	G	G	G	G	G	
No. 11 (R.D. 2077 & Unorg.)	4.0														G	G	G	G	G	G	G	G	G	G	G	G	G	G	
O-Outstanding G-Good F-Fair P-Poor																													

O-Outstanding G-Good F-Fair P-Poor

SUMMARY OF MAINTENANCE BY YEARS
SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

SHEET 6 OF 6 SHEETS

District or Area	Total miles	Summary maintenance record by years																												
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	
MAINTENANCE AREAS (cont.)																														
No. 12 (Colusa Basin Drain)	11.3											G	G	G	G	G	G	G	G	G	G	G								
(Cherokee Canal)																G	G	G	G	G	G	G								
No. 13 Butte County	42.0																													

[illegible]

TABLE 5

SUMMARY OF MAINTENANCE BY YEARS
SAN JOAQUIN AND TRIBUTARIES AND MISCELLANEOUS PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 1, Union Island	1.2																												
R.D. No. 17, Mossdale	16.2																												
R.D. No. 404, Boggis	4.1																												
R.D. No. 524, Mid Roberts Isl.	6.3																												
R.D. No. 544, Upper Roberts Isl.	10.3																												
R.D. No. 2031, Elliott	13.2																												
R.D. No. 2058, Pescadero	6.7																												
R.D. No. 2062, Island	12.2																												
R.D. No. 2063, Crows Landing	10.6																												
R.D. No. 2064, River Junction	9.7																												
R.D. No. 2075, McMullin	7.6																												
R.D. No. 2085, Kasson	5.4																												
R.D. No. 2089, Stark	2.9																												
R.D. No. 2091, Chase	7.6																												
R.D. No. 2092, Dos Rios	3.8																												
R.D. No. 2094, Walthall	3.3																												

1/ Reconstruction - Not Inspected O-Outstanding G-Good F-Fair P-Poor

1/ Reconstruction - Not Inspected 0-Outstanding G-Good F-Fair P-Poor

TABLE 5

SUMMARY OF MAINTENANCE BY YEARS
SAN JOAQUIN AND TRIBUTARIES AND MISCELLANEOUS PROJECTS

District or Area	Total miles	Summary maintenance record by years																											
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 2095, Paradise Junction	4.4												P	P	P	P	P	P	P	P	P								
R.D. No. 2096, Weatherbee Lake	0.2																		G	G	G								
R.D. No. 2099, El Soya Ranch	2.4																			<u>1</u> /F									
R.D. No. 2100, White Lake Ranch	2.7																			<u>1</u> /G									
R.D. No. 2101, Blewett	3.5																			<u>1</u> /G									
R.D. No. 2102, Lara Ranch	1.8																			<u>1</u> /F									
Lower San Joaquin Levee Dist.	191.5															G	G	G	G	G	G								
San Joaquin County (unorganized)	4.2												P	P	P	P	P	P	P	P	P								
MISCELLANEOUS PROJECTS																													
Littlejohns & Duck Cr. Div. (San Joaquin Co. Fl. Cont. Dist.)	6.4					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G								
Bear Creek San Joaquin County Flood Control District	46.5																			<u>1</u> /G	G	G							
Merced County Stream Group (Merced Irrigation District)	6.4												P	F	G	G	F	F	G	G	G								
Fresno County Stream Group (Fresno Irrigation District)	9.3					G	G	G	G	G	G	G	F	G	G	G	F	F	F	G	G								
Middle Creek (Lake County Fl. Cont. Dist.)	14.3														G	G	G	F	G	G									
Truckee River Channel (Placer Co. Dept. of Public Works)	0.6															G	G	G	G	G	G								
0-Outstanding																													
G-Good																													
F-Fair																													
p-Poor																													
Not Inspected																													

TABLE 6

1967 SUMMARY
OFMAINTENANCE PERFORMANCE ON SACRAMENTO RIVER AND TRIBUTARIES
AND AMERICAN RIVER FLOOD CONTROL PROJECT

GOOD	FAIR	POOR
L.D. No. 1	R.D. No. 3	R.D. No. 307
L.D. No. 2	R.D. No. 150	R.D. No. 317
L.D. No. 3	R.D. No. 341	R.D. No. 349
L.D. No. 9	R.D. No. 556	R.D. No. 369
R.D. No. 10	R.D. No. 563	R.D. No. 554
R.D. No. 70	R.D. No. 755	R.D. No. 827
R.D. No. 108	R.D. No. 765	R.D. No. 2103
R.D. No. 407	R.D. No. 785	Eastern Honcut
R.D. No. 501	R.D. No. 817	Creek
R.D. No. 536	R.D. No. 999	
R.D. No. 537	R.D. No. 1601	
R.D. No. 551	R.D. No. 2067	
R.D. No. 777		
R.D. No. 784		
R.D. No. 787		
R.D. No. 900		
R.D. No. 1000		
R.D. No. 1001		
R.D. No. 1500 ^{1/}		
R.D. No. 1600		
R.D. No. 1660		
R.D. No. 2035 ^{1/}		
R.D. No. 2060		
R.D. No. 2068		
R.D. No. 2098		
R.D. No. 2104		
Amer. Riv. Fl.		
Cont. Dist.		
City of Marysville ^{1/}		
City of Sacramento		
Sacto. Riv. Westside		
Levee District		
Knights Landing		
Ridge D.D.		
Tehama Co. Fl.		
Cont. Dist.		
Cache Creek (Yolo		
County)		
Chico, Mud & Sandy		
Crks. (Butte Co.)		
STATE MAINTAINED AREAS		
Maintenance Areas No.		
1, 2, 3, 4, 5, 6, 7, 8, 9,		
10, 11, 12 & 13		

^{1/} Outstanding

TABLE 7

1967 SUMMARY
OF
MAINTENANCE PERFORMANCE ON SAN JOAQUIN RIVER AND TRIBUTARIES
AND MISCELLANEOUS PROJECTS

GOOD	FAIR	POOR
R.D. No. 1	R.D. No. 404	R.D. No. 2091
R.D. No. 17	R.D. No. 524	R.D. No. 2095
R.D. No. 2031	R.D. No. 544	San Joaquin Co.
R.D. No. 2058	R.D. No. 2089	(Unorganized)
R.D. No. 2062	R.D. No. 2092	
R.D. No. 2063	R.D. No. 2099	
R.D. No. 2094	R.D. No. 2102	
R.D. No. 2096		
R.D. No. 2100		
R.D. No. 2101		
San Joaquin County		
Flood Cont. Dist.		
Fresno County Stream		
Group		
Merced County Stream		
Group		
Lower San Joaquin		
Levee District		
Lake County Flood		
Control District		
Truckee River		
(Channel)		

APPENDIX A
STANDARD MAINTENANCE PROCEDURES

STANDARD MAINTENANCE PROCEDURES

Levee maintenance is a continuing task which must be carried on each year without interruption. Each year steps must be taken to exterminate burrowing animals and to provide for routine mowing and burning of grass and weeds, removal of wild growth and repair of damage by erosion or other causes. The principal objectives of annual maintenance are to produce a stable levee at the start of the high water season and to have the slopes clear for effective inspection and, if necessary, patrolling and flood fighting activities.

In order to secure a uniform degree of operation and maintenance on federal flood control projects throughout the nation, the U. S. Corps of Engineers has issued regulations governing the maintenance and operation of flood control works. These regulations established a high standard of maintenance.

"Recommendations for Levee Maintenance", listed hereafter with comments, were adapted from U. S. Corps of Engineers regulations by the Department of Water Resources:

"1. Clear brush, trees and wild growth, other than sod from the levee crown and slopes. Herbicides applied with suitable equipment, under proper control and conditions, have been successfully employed in eradicating pernicious growths of vegetation."

Contrary to the often expressed belief that growth of trees and brush is beneficial for protection of the levee slopes, long experience has demonstrated that this is in error for the following reasons:

Under wind and wave action the larger growths tend to pull at their root systems, causing them to uproot themselves, disturb the soil or rock revetment and permit accelerated erosion to take place. Fallen trees may also cause harmful current deflection and accumulate drift, which can compound the erosive action. The roots of large trees also attract burrowing animals to the protective shelter afforded.

Removal of such growth promotes a growth of sod or grass, the pliable roots of which tend to provide a soil binding net.

The application of herbicides, applied under permit obtained from the county agricultural commissioner, should be performed annually to eradicate noxious weeds and to prevent regrowth of larger plants.

"2. Burn weeds, grass and debris on the levee during the appropriate season, where not dangerous or impracticable, in order to permit the detection of cracks, holes, burrows, slips and other damage and to permit the detection and extermination of burrowing animals. Restrictions in the area in connection with air pollution control should be checked before undertaking any burning operation."

This task should be performed annually during the late summer months after adjacent high inflammable crops have been removed. Fireguards should be established around improvements and burning should be performed in such a manner as to take advantage of prevailing winds.

Burning before July destroys wildlife habitats and delaying the task until after the first rains has been unsuccessful in nearly all instances due to the high absorption rate of dry material, particularly the woody stemmed weeds.

"3. Mow grass and weeds on the levee where removal by burning is dangerous or impracticable, such as on peat levees or where burning would constitute a hazard to improvements, or where burning is restricted for any purpose."

This item is in lieu of burning as provided for in the preceding item. It is for the most part, intended to apply only to peat levees which comprise only a few miles.

Protection for improvements may be accomplished by mowing, fireguarding, or the use of soil sterilants.

"4. Exterminate burrowing animals with the use of poison, gas, or traps. This task requires frequent patrols in order to assure successful results."

The control and extermination of burrowing animals must be pursued frequently and persistently in order to assure the safety of the levee during flood periods.

The eradication of these animals is a necessity and their elimination from an infested levee is extremely difficult. It can only be effectively accomplished on a cleared levee through constant effort. Care should be exercised not to poison birds and other desirable wildlife.

Observation indicates that, contrary to general belief, burrowing rodents can and do infest sand levees as well as those composed of heavier or more cohesive soils. A possible explanation for this condition is the fact that many of the sand levees are in reality a sand cover placed over an older soil levee. It is also a fact that some of the older pipe structures, those without cutoff walls, provide a means whereby burrowing rodents

can and do excavate burrows immediately under the pipe and thus provide a non-caving burrow.

"5. Repair caves, sloughs, burrows, holes, slips or other damaged portions of the levee with suitable material properly bonded and compacted in place."

This item of the recommendations clearly defines the procedure required. However, particular attention should be directed to the complete filling and compacting of rodent burrows.

It has often been observed that maintenance personnel have effectively exterminated the burrowing animals but have failed to backfill the burrows, the most essential part of the task. If the burrows are filled, the detection of fresh diggings will show that the rodents were not exterminated and repeated poisoning or gassing is required.

"6. Examine and repair, as required, drains and appurtenant control works and other structures through the levee."

A thorough examination of each and every structure situated in, on, or through the levee, should be made at least once yearly to determine its stability. All component parts should also be examined for effectiveness of operation and reliability. The installation of new, or repairs to older structures, should be made only in accordance with adopted standards and under the supervision of qualified personnel.

Defective structures should be immediately repaired or replaced. Abandoned structures should be removed from the levee or otherwise treated so as not to become hazards.

"7. Replace or repair displaced or damaged revetment work or riprap."

The very fact that revetment works have been installed at a location is indicative of the need for extra protection and such works should never be permitted to deteriorate.

Damages to existing revetment works are for the most part, few in number. However, those which have occurred are largely caused by nonmaintenance. Growth of trees and brush should be controlled in order to prevent damage or displacement of revetment.

The early detection of damage and prompt repair will, in most instances, result in a minimum of effort and expense to restore the revetment. Many times a simple rearrangement of the stones or cobble will produce the desired result. Occasionally it may be necessary to place additional rock at damaged locations in the existing work.

"8. Maintain the road on the levee and shape the crown so as to provide uniform drainage. Restrict unauthorized vehicular travel."

Surfaced crown patrol roadways have been established on nearly all project levees exclusively for the convenience of maintenance patrols and flood fighting personnel. It is essential that the roads be maintained in good condition for these purposes. The roadway should be bladed and maintained to provide a smooth surface, without ruts or potholes. The levee shoulder should be sloped so as to immediately drain rainfall away from the crown. In general, the entire crown should be rounded with the center higher than the shoulders. A flat, level section across the crown is considered poor practice.

Except for those levees upon which a public road has been established, vehicular traffic should be restricted to maintenance personnel only. Proper maintenance includes the placing of additional surfacing when and as required, to provide a stable, reliable roadway for maintenance, patrols, and flood fighting.

"9. Restrict stock grazing on the levee to conditions and seasons when the levee would not be seriously scarred or otherwise damaged thereby."

This item is probably the most controversial requirement in the recommendations. Although considered a proprietary right by many landowners and operators adjacent to the levee, this practice is a privilege only, and if allowed, should be carried on only under strict surveillance. Several legal decisions have been rendered in support of this recommendation.

Grazing on the levees should be tolerated only under the control of and by permit from the responsible district authority. Under this plan, those who abuse the privilege may be restricted and prevented from causing damage, the repair of which becomes a local district obligation.

"10. Remove or rectify obstacles to travel by authorized patrol vehicles."

This recommendation is self-explanatory and fully justified, however, some further explanation is presented.

The desirability of preserving property lines may be justified; however, some of the existing levee gates erected for this purpose appear to have been installed to impede traffic

and the numerous intervening structures of a like nature are unnecessary for any purpose other than an obstruction, or for the undesirable practice of confining livestock on the levee. If cross fences and gates are necessary, they should be so constructed that they may be quickly and easily operated.

All other obstructions or encroachments on the levee should be removed unless specifically authorized by permit from The Reclamation Board.

"11. Prevent the erection of structures on, additions to, or alterations of the levee unless authorized by permit from The Reclamation Board."

This recommendation is not only a part of the federal regulations, but is specifically covered by state legislation which is all inclusive of any encroachment on the levees and other flood control works.

It is the responsibility of all districts or agencies to insure that before any work is started on any structure, building, pipeline, poleline, or construction of any kind, whether it is in, on, along or under any levee, or fill on or next to the levee, or on the berm, or on the landside near the levee or in the overflow or flooded area, that an application, complete with plans, be filed in triplicate with The Reclamation Board. Approved applications are covered by a permit which designates the conditions under which the proposed work may be accomplished. One of the conditions of the permit is that three-day notice prior to the start of construction must be given to the Department of Water Resources.

The Department inspects and supervises the installation of these encroachments to insure that the work conforms to the plans and conditions as approved by The Reclamation Board.

"12. Organize forces, stock materials, and procure equipment for general maintenance and for patrols and repairs during emergencies."

In order to meet these requirements, a permanent operating organization, properly equipped, is necessary to perform ordinary maintenance, make repairs and direct supplementary forces during emergencies.

It is therefore suggested that the district, or other agency responsible for performing the work, provide the following:

(a) A superintendent to organize forces and direct operations.

(b) Stocks of standard flood fighting materials and supplies, such as sacks, burlap, canvas, lumber and etc. These stocks should be seriously considered, particularly in localities which might become isolated from sources of supply during emergencies.

(c) Suitable equipment for the performance of maintenance, secured either through purchase or rental. A list of available equipment should be made prior to the flood season for possible use during emergencies.

(d) Frequent patrols and inspections of the levees. During flood periods constant patrols should be inaugurated and continued for the duration of the emergency. Such patrols should be equipped with supplies, materials and tools.

Prior to flood season, arrangements should be made for the ready procurement of flood fighting labor forces and supervisory personnel.

A P P E N D I X B

LEVEE CONSTRUCTION DURING 1967

MAJOR LEVEE RECONSTRUCTION
DURING 1967

During 1967, the U. S. Corps of Engineers completed levee construction, reconstruction, patrol roads, turnouts, bank protection and channel improvement work on the following projects:

SACRAMENTO RIVER FLOOD CONTROL PROJECT

<u>Specification No.</u>	<u>Site Mile or Unit No.</u>	<u>Location</u>	<u>Maintaining Agency</u>	<u>Levee Mile</u>	<u>Description of Work Completed</u>
3154	80.7 R	Right Bank Sacto. River	R.D.No. 1600	9.44 to 9.60	Levee Reconstruction Rock Revetment & Gravel Crown Roadway
3156	16.7	Left Bank Steamboat Slu.	R.D. No. 3	9.46 to 9.69	Levee Reconstruction Rock Revetment & Paved Crown Roadway
3156	17.3	do	R.D. No. 3	8.83 to 8.87	do
3156	17.4	do	R.D. No. 3	8.72 to 8.75	do
3156	17.6	do	R.D. No. 3	8.54 to 8.56	do
3156	18.0	do	R.D. No. 3	7.95 to 8.35	do
3156	19.3	do	R.D. No. 3	6.64 to 7.26	do
3156	20.0	do	R.D. No. 3	5.92 to 6.19	do

<u>Specifica- tion No.</u>	<u>Site Mile or Unit No.</u>	<u>Location</u>	<u>Maintaining Agency</u>	<u>Levee Mile</u>	<u>Description of Work Completed</u>
3156	20.7	do	R.D. No. 3	5.42 to 5.47	do
3156	20.9	do	R.D. No. 3	5.11 to 5.35	do
3156	21.3	Left Bank Steamboat Sl.	R.D. No. 3	4.75 to 4.92	do
3156	21.8	do	R.D. No. 3	4.29 to 4.41	do
3156	22.2	do	P.D. No. 3	3.83 to 3.90	do
3156	22.8	do	R.D. No. 3	3.22 to 3.26	do
3156	23.4	do	R.D. No. 3	2.68 to 2.74	do
3156	23.7	do	R.D. No. 3	2.33 to 2.35	do
3156	24.0	do	R.D. No. 3	1.97 to 2.10	do
3156	24.2	do	R.D. No. 3	1.81 to 1.87	do
3156	24.4	do	R.D. No. 3	1.59 to 1.76	do
3157	1.3	Left Bank Threemile Sl.	R.D. No. 1601	0.32 to 0.39	Levee Reconstruc- tion Rock Revet- ment & Gravel Crown Roadway

<u>Specifica- tion No.</u>	<u>Site Mile or Unit No.</u>	<u>Location</u>	<u>Maintaining Agency</u>	<u>Levee Mile</u>	<u>Description of Work Completed</u>
3157	1.7	do	R.D. No. 1601	1.01 to 1.11	do
3157	16.6	Left Bank Sacto. River	R.D. No. 2067	0.76 to 0.86	Levee Reconstruc- tion Rock Revet- ment & Paved Crown Roadway
3157	18.5	Right Bank Sacto. River	R.D. No. 3	3.56 to 3.67	do
3157	18.8	do	R.D. No. 3	3.85 to 3.93	do
3157	23.7	do	R.D. No. 3	8.82 to 9.00	do
3157	24.1	do	R.D. No. 3	9.10 to 9.40	do
3157	29.4	Left Bank Sacto. River	R.D. No. 551	5.25 to 5.69	Levee Reconstruc- tion Rock Revet- ment & Paved Crown Roadway
3157	29.9	do	R.D. No. 551	4.83 to 4.93	do
3157	31.0	do	R.D. No. 551	3.69 to 4.07	do
3157	31.3	do	R.D. No. 551	3.28 to 3.69	do

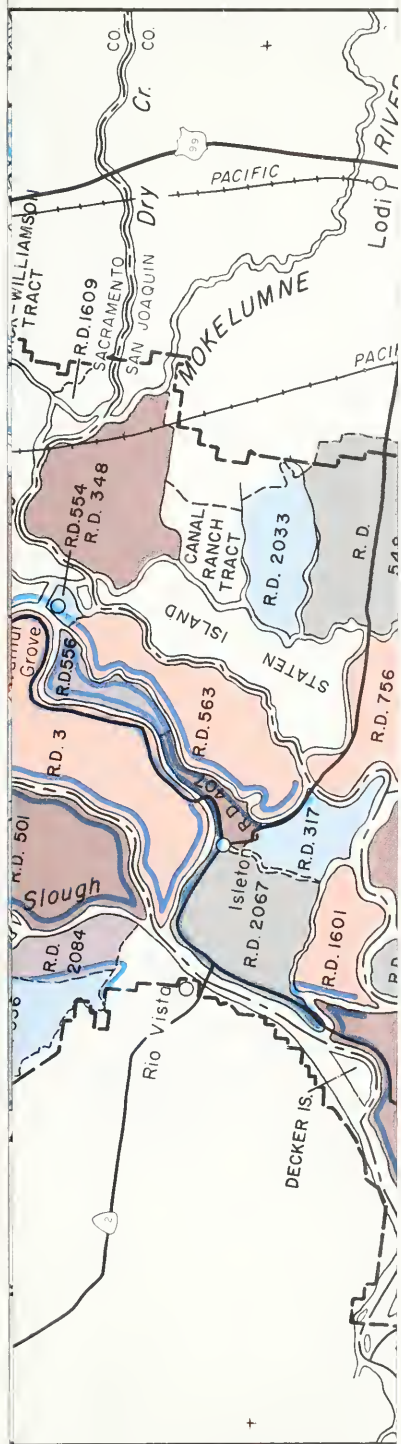
<u>Specifica- tion No.</u>	<u>Site Mile or Unit No.</u>	<u>Location</u>	<u>Maintaining Agency</u>	<u>Levee Mile</u>	<u>Description of Work Completed</u>
3157	31.9	do	R.D. No. 551	2.79 to 2.96	do
3157	36.5	do	R.D. No. 755	0.16 to 0.23	do
3157	35.0	Right Bank Sacto. River	R.D. No. 150	1.00 to 1.18	do
3157	37.5	do	R.D. No. 150	3.57 to 3.64	do
3157	38.0	do	R.D. No. 150	3.95 to 4.13	do
3157	52.9	do	R.D. No. 900	5.97 to 6.50	do
3288	79.5	do	R.D. No. 1600	8.50 to 9.10	Levee Reconstruc- tion Rock Revet- ment & Gravel Crown Roadway
3288	147.5	Left Bank Sacto. River	State of California	8.30 to 8.82	do
3418	1	Left Bank Yolo Bypass	R.D. No. 827	1.29 to 2.75	Levee Reconstruc- tion & Rock Revet- ment
3418	2	do	R.D. No. 900	0.50 to 0.98	do

<u>Specifica- tion No.</u>	<u>Site Mile or Unit No.</u>	<u>Location</u>	<u>Maintaining Agency</u>	<u>Levee Mile</u>	<u>Description of Work Completed</u>
3418	3	Right Bank Yolo Bypass	R.D. No. 2098	0.03 to 0.60	do
3418	3	do	R.D. No. 2098	1.00 to 1.62	do
<u>SAN JOAQUIN RIVER FLOOD CONTROL PROJECT</u>					
3042		Left Bank San Joaquin Riv.	R.D. No. 2085	0.00 to 5.40	Levee Construc- tion Rock Revet- ment Gravel Crown Roadway

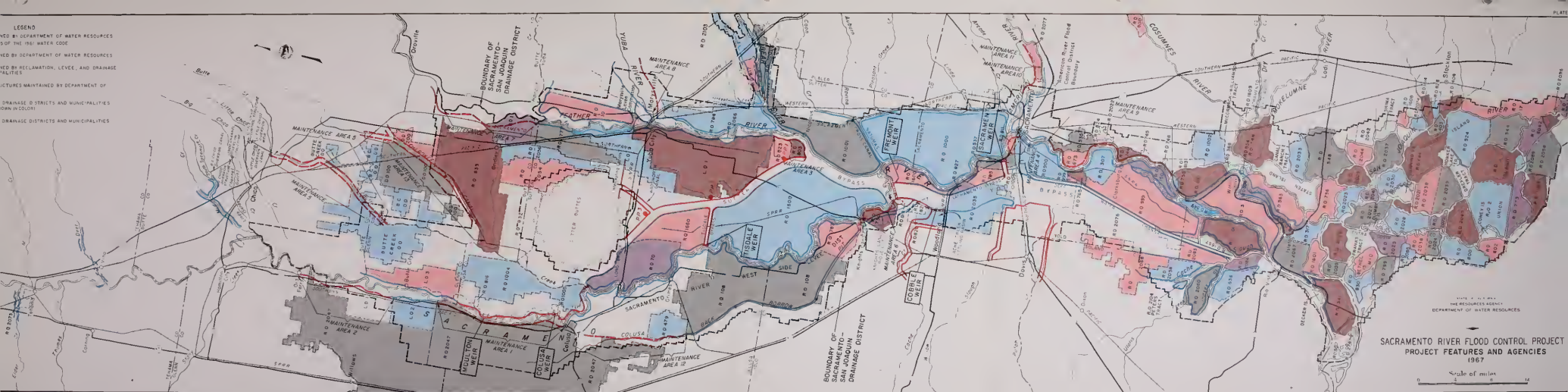
Total new construction during 1967 by U. S. Corps of Engineers

Miles of construction or reconstruction.... 15.8

Miles of rock revetment..... 11.8



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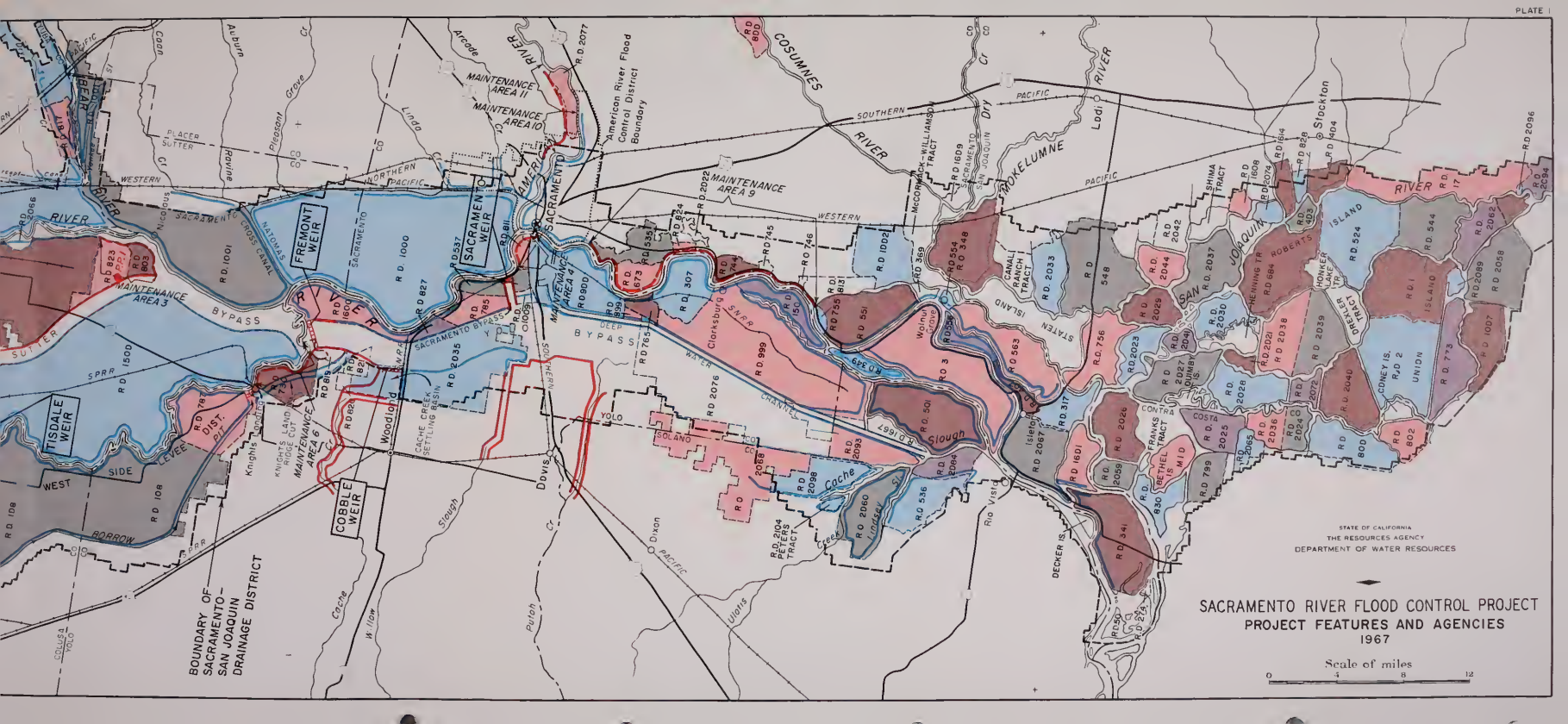
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- PROJECT LEVEES MAINTAINED BY RECLAMATION, LEVEE, AND DRAINAGE DISTRICTS AND MUNICIPALITIES.
- PUMPING PLANTS AND STRUCTURES MAINTAINED BY DEPARTMENT OF WATER RESOURCES
- RECLAMATION, LEVEE, AND DRAINAGE DISTRICTS AND MUNICIPALITIES WHICH ARE ACTIVE (SHOWN IN COLOR)
- RECLAMATION, LEVEE, AND DRAINAGE DISTRICTS AND MUNICIPALITIES WHICH ARE INACTIVE.



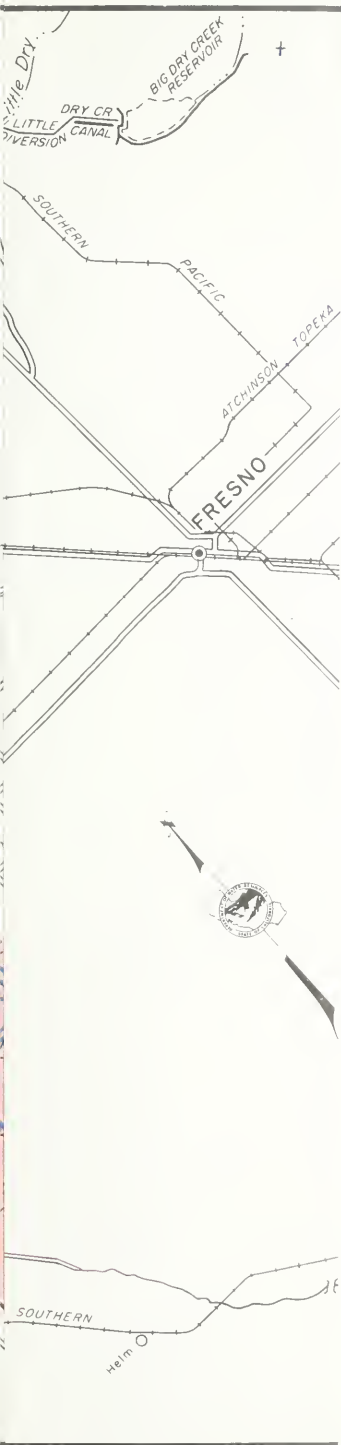


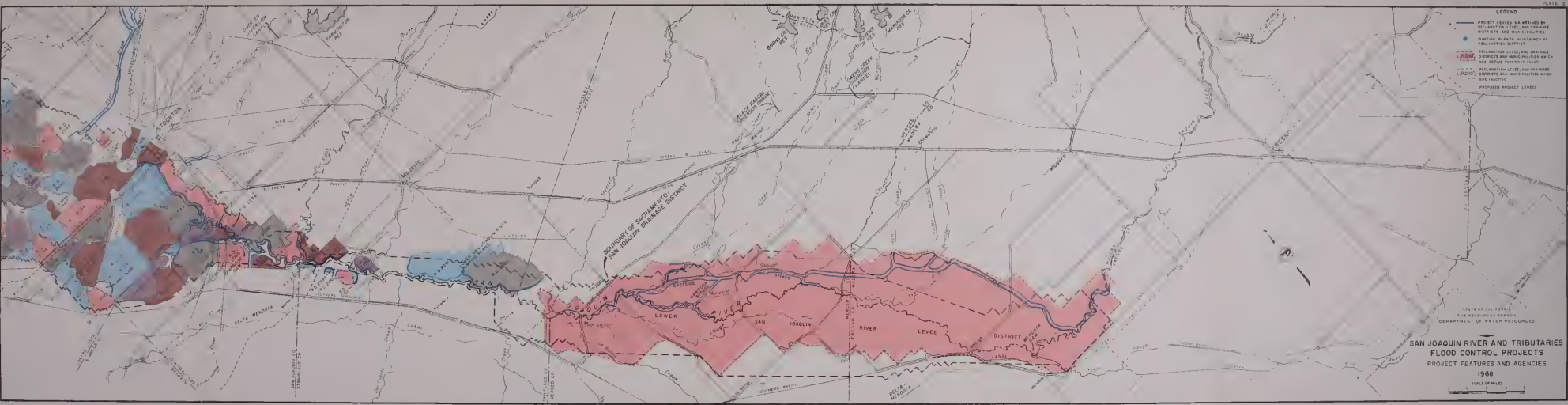
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